METHOD AND APPARATUS FOR FRAME CLASSIFICATION AND RATE DETERMINATION IN VOICE TRANSCODERS FOR TELECOMMUNICATIONS

ABSTRACT OF THE DISCLOSURE

A method and apparatus for frame classification and rate determination in voice transcoders. The apparatus includes a classifier input parameter preparation module that unpacks the bitstream from the source codec and selects the codec parameters to be used for classification, parameter buffers that store previous input and output parameters of previous frames, and a frame classification and rate decision module that uses the source codec parameters from the current frame and zero or more frames to determine the frame class, rate, and classification feature parameters for the destination codec. The classifier input parameter preparation module separates the bitstream code and unquantizes the sub-codes into the codec parameters. These codec parameters may include line spectral frequencies, pitch lag, pitch gains, fixed codebook gains, fixed codebook vectors, rate and frame energy. The frame classification and rate decision module comprises M sub-classifiers and a final decision module. The characteristics of the sub-classifiers are obtained by a classifier construction module, which comprises a training set generation module, a learning module and an evaluation module. The method includes preparing the classifier input parameters, constructing the frame and rate classifier and determining the frame class, rate decision and classification feature parameters for the destination codec using the intermediate parameters and bit rate of the source codec. Constructing the frame and rate classifier includes generating the training and test data and training and/or building the classifier.

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